Golden eagle predation on domestic calves

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Golden eagles do kill calves. Animal Damage Control investigators put these events in perspective for enlightened management decisions.

Adult golden eagles on a nest. Photo by W. Perry Conway.

Golden eagle (*Aquila chrysaetos*) predation on livestock has been documented in many areas of the western United States (Phillips and Blom 1988). Most depredation complaints involve eagles preying on young lambs and goats (U.S. Dep. Agric. 1991). However, investigators have documented eagles killing larger prey species such as adult mule deer (*Odocoileus hemionus*) and pronghorn (*Antilocapra americana*), coyotes (*Canis latrans*), domestic calves, and domestic sheep (Arnold 1954, McEneaney and Jenkins 1983). Published eye-witness accounts of a golden eagle killing a calf are limited to a single observation in California (Wood 1946). We report a severe case of golden eagle predation on calves in Socorro County in central New Mexico from 1987 to 1989.

Study area

Eagle predation occurred on the Tigner Brothers Ranch, 56 km south of Magdalena, New Mexico. The ranch consists of 4,856 ha (approx. 12,000 acres) of private land and 2 adjoining state and U.S. Forest Service (USFS) grazing allotments totaling 20,842 ha (approx 51,500 acres). Elevations range from 1,666 m on the private portion of the ranch to 2,000 m on USFS lands. Topography of the area ranges from flat to steep mountainous terrain with rugged canyons and rock outcrops. Vegetation of the area is characterized by grasslands dominated by grama grass (*Bouteloua* spp.) at lower elevations, changing to Piñon (*Pinus* spp.)-Juniper (*Juniperus* spp.) type at higher elevations.

One occupied golden eagle territory associated with an active nest was located on the ranch. Migrant golden eagles and bald eagles (*Haliaeetus leucocephalus*) were common in the area from October to March. Eagle prey species included cottontail rabbits (*Sylvilagus* spp.), black-tailed jackrabbits (*Lepus californicus*), rock squirrels (*Spermophilus variegatus*), and other small mammals, birds, and reptiles.

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Methods

Complaints of golden eagles attacking and killing calves were investigated by personnel from the U.S. Department of Agriculture (USDA) Animal Damage Control (ADC) program. Injured and dead calves were examined to determine the source of injury and the cause of death. Techniques described by Wade and Bowns (1986) were used to identify the responsible predator. Loss figures were calculated based on the current market value of calves at the time they were killed and costs associated with veterinary treatment of injured calves. Eagle live-capture methods included the use of padded leghold traps set around carcasses, and the helicopter-net gun method (O'Gara and Getz 1986).

Results and discussion

From 1987 to 1989, ADC personnel confirmed 6 calves killed and 48 injured by golden eagles on the Tigner Ranch. Most of the eagle attacks occurred during March–October. The ranch owner reported an additional 6 calves killed and 13 injured from eagle attacks. We estimated loss resulting from calves killed and costs associated with treatment of injured animals during 1987–1989 at $19,620.

Calves killed or injured by golden eagles weighed approximately 41 kg–114 kg. Necropsies showed that eagles typically attacked most calves by hitting them immediately behind the head (Fig. 1). However, 1 calf was hit along the lower back. Eagles ate some of the dead calves, but not all. Wounds from talon punctures were noted behind the ears and across the top of the head. In some cases, talons punctured the skull and entered the brain cavity. Some injuries caused by eagles were not life-threatening, but infection from the wounds caused death. Many talon wounds resisted treatment and remained infected for >1 year. We suspect that many of the dead calves were seriously injured by 1 or more attacking eagles and died many hours after the attack.

After we confirmed that golden eagles were responsible for calf depredations, the U.S. Fish and Wildlife Service (USFWS) and the New Mexico Department of Game and Fish provided permits to remove eagles from the property. In early 1988, 2 immature golden eagles were captured using foothold traps. However, calf attacks continued after we removed these birds. Observations by Tigner ranch and ADC personnel suggested that adult eagles associated with a breeding territory on the ranch were responsible for the depredations. In August 1989, the resident pair was captured using a net gun from a helicopter. These eagles were transported to the Denver Wildlife Research Center and became part of a captive eagle colony. A telephone interview with G. Tigner in November 1994 indicated there were no further eagle attacks on calves on his ranch after the adult eagles were removed. Therefore, we concluded that 1 or both members of the captured pair were responsible for the calf attacks.

Golden eagle attacks on domestic calves are not well documented. During our investigation, J. Foard of ADC witnessed an eagle diving to pursue a young calf. The calf escaped by running into dense brush. Field observations indicated that smaller prey species such as rabbits (*Sylvilagus* spp.) and ground squirrels (*Spermophilus* spp.) were numerous on the study area and should have provided a stable food source. Evidently the resident eagles killed calves despite an apparent abundance of smaller prey.

In March 1994 we received another report of eagles attacking calves near Vale, Oregon (A. Armis-

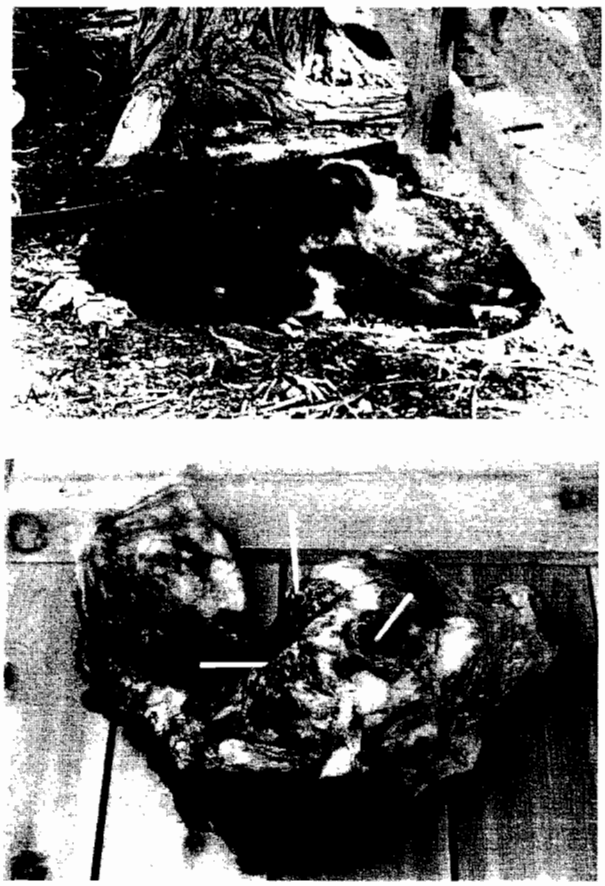

Fig. 1. (A) Domestic calf weighing approximately 41 kg attacked by eagle(s) near Socorro, New Mexico, in August 1989; this animal was paralyzed following the attack and later euthanitized, (B) Skull from calf (above) showing talon punctures and hemorrhaging at base of skull.

tead, U.S. Dep. Agric. Anim. Damage Control, John Day, Oreg., pers. commun., 1994). In this case, 3 young calves weighing approximately 36 kg were verified by Oregon ADC personnel as having been attacked by golden eagles. One calf died following an attack, and 2 others received veterinary treatment for talon puncture wounds. A necropsy of the dead calf revealed numerous puncture wounds on the back and neck with massive subcutaneous hemorrhages. In response to the depredation complaint, 1 adult golden eagle was live-trapped and removed from the area; no further attacks were reported. We believe the type of eagle hunting behavior reported in New Mexico and Oregon is unusual and site specific; the factors causing it are unknown. Wildlife managers need to be aware of this behavior and put it in proper context for management decisions.

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